

When the player 202 determines that its player signal matches the title signal, shown schematically as step 112a, it can inform the user of the match at step 114. A variety of different mechanisms can be used to do this. For example, a overlay screen might appear on the user's TV monitor 220 connected to the player 202, informing the user of the match. Alternatively, the player 202 might jump to a chapter of the video, which might otherwise be hidden from view, which would inform the viewer of the match. Numerous other mechanisms are also possible without departing from the scope or spirit of the present invention.

Detailed Description Text (15):

Thus, the player 202 of the present invention can invoke an action based upon a comparison of information (i.e., the title signal) contained in the digital data content (i.e., movie) and in the player. One possible way to create functionality that is desirable to the consumer is through the use of prize marketing. In the simplest implementation, the player signal would be random and the title signal would match some (approximately) known number of players 202. The movie, or digital content in general, could then be marketed with the opportunity to win, for instance a cash prize, if the title signal contained in the digital data matched the player's player signal.

Detailed Description Text (16):

The viewer might also be instructed to telephone a coordination center to verify the match. The center would not need to know the title signal for the movie, only the set of possible matching player signals. For security reasons, the viewer might only be informed of an encrypted version of the player signal which could be decrypted at the coordination center. In this manner, the same player signal could not be used again and the encryption prevents users from guessing other numbers that might also match.

Detailed Description Text (18):

The manufacturers of the players, such as DVD equipment, also gain advantages from the methods of the present invention. First, the consumer sees a further distinction between DVD video players and conventional VHS players. In particular, this product differentiation is complimentary to the higher quality of the DVD video over VHS video, which may not be sufficient to persuade users to switch to DVD.

Other Reference Publication (8):

Matsui, et al., Video-Stenography: How To Secretly Embed a Signature in a Picture, IMA Intellectual Property Project Proceedings, vol. 1, Issue 1, pp. 187-206, Jan. 1994.

CLAIMS:

8. The method of claim 2, wherein the digital data is digital video data.
13. The method of claim 11, wherein the data is digital video data and the consequence is allowing a hidden video chapter to be viewed.
15. The method of claim 11, wherein the action is to inform the device user of the match and of the player signal, or an encrypted version thereof.
37. The device of claim 30, wherein the digital data is digital video data.
43. The device of claim 41, wherein the data is digital video data and the consequence is allowing a hidden video chapter to be viewed.
45. The device of claim 41, wherein the action is to inform the device user of the match and of the player signal, or an encrypted version thereof.

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**WEST**

Generate Collection

Print

L5: Entry 2 of 112

File: USPT

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TITLE: Method for increasing the functionality of a media player/recorder device

Abstract Text (1):

A method for utilizing a title signal contained in data through a comparison of the title signal to a player signal stored in a player device is provided. Preferably, the data is digital image, video, or audio data. The method includes the steps of: providing data having the title signal; detecting, at the player device, the title signal in the data: comparing the title signal to the player signal stored at the player device; and performing an action based upon the comparison. In a preferred implementation, the action is performed if the title signal matches the player signal, and the action is to inform the device user of the match and the winning of a prize. In another preferred implementation, the title signal is a subsignal of a watermark signal encoded in the digital data, in which case the method further comprises the steps of: extracting the watermark signal from the digital data; and decoding the subsignal. Also provided are devices, such as DVD players/recorders, for carrying out the methods of the present invention.

Brief Summary Text (3):

The present invention relates generally to a method for increasing the functionality of a media player/recorder device and, more particularly, to a method utilizing a title signal contained in digital video or audio data or encoded as a subsignal of a digital watermark signal contained in the digital video or audio data.

Brief Summary Text (5):

There is considerable interest in applying watermarking as a complimentary technology to encryption for copy protection of content on DVD video discs. It is currently proposed to insert 4-bits of copy control information. The first 2-bits indicate the copy permission associated with the content, i.e., free-to-copy, copy-once, copy-no-more and never-copy. The other 2-bits are used to control the associated analog copy protection system that prevents VHS recording of copy-no-more and copy-never material. The watermark is expected to code these 4-bits of information and 4 additional bits whose use is not yet defined.

Brief Summary Text (6):

In order for the copy protection system to work, all DVD recorders--preferably all (digital) video recorders--must have watermark detector circuitry that detects a watermark in the video and prevents the compliant DVD player or recorder from performing an illegal action, e.g., recording a copy-never movie. The cost of this detector may be small and is borne by the equipment manufacturers, despite the fact that there is no direct benefit to said manufacturers. In fact, adding copy generation control to DVD players and recorders not only costs manufacturers money but also reduces the functionality of the devices in the view of the consumer, i.e. consumers want to make copies of movies. Of course, both the equipment manufacturer and the consumer indirectly benefit, since without adequate copy protection technology, content owners would not publish their content on this media.

Brief Summary Text (12):

Accordingly, a method for utilizing a "title signal" contained in multiple copies of a title is proposed. Here, title refers to the title of a movie, for example "Waterworld", and the multiple copies refer to say, each copy of the movie that is replicated onto a DVD disk or VHS tape. When a copy of a title is played, the title

signal is compared with a player signal previously stored in a player device. Preferably, the data is digital image, video (both of which are hereinafter referred to as image data), or audio data. However, the proposed method is also applicable to analog recording and playback. The method comprises the steps of: providing data having the title signal; detecting, at the player device, the title signal in the data; comparing the title signal to the player signal stored at the player device; and performing an action based upon the comparison.

Brief Summary Text (13):

In a preferred implementation, the action is performed if the title signal matches the player signal, and the action is to notify the device user of the match and the winning of a prize. Other actions are also possible, including allowing the user to view hidden video chapters of the movie or hidden audio tracks. Any action that a user perceives as valuable is a candidate action.

Detailed Description Text (2):

Although this invention is applicable to numerous and various types of data and player devices, it has been found particularly useful in the environment of digital data, preferably digital video data contained on a DVD disk and in the environment of DVD players and recorders. Therefore, without limiting the applicability of the invention to digital video data and DVD players, the invention will be substantially described in such environment.

Detailed Description Text (6):

The method 100 comprises a first step at 102 of providing the digital data having the title signal. Content owners would produce the digital data, preferably in the form of a DVD 204 containing digital video data such as a motion picture. However, it will be appreciated by those skilled in the art, that the means for providing the digital data having the title signal can be in any one of many forms and containing any one of possible content. A further variation on the method is to permit a title to have more than one title signal, i.e. some copies would contain one title signal, another set of copies would contain different title signal, etc. In the limit, each copy might contain a unique title signal. However, in practice, this is unlikely, due to the nature of the replication process. At step 104, the device 200 then detects the title signal in the digital data (or the subsignal contained in the watermark signal) by any detection means 206 known in the art.

Detailed Description Text (7):

If the title signal is in the form of a subsignal of a watermark encoded in the digital data, then the watermark must be extracted from the video data at step 106 and decoded at step 108. Any means for extracting a subsignal from a watermark signal 208 and decoding the subsignal 210 known in the art can be utilized for this purpose without departing from the scope or spirit of the present invention.

Detailed Description Text (10):

The novel feature of the present invention is that an N-bit signal (referred to as the title signal), be associated with the digital data, e.g., digital video. This may be done in a variety of different ways. For example, the title signal may be inserted as part of a watermark as discussed above.

Detailed Description Text (11):

If the digital data content is a movie, the title signal is preferably identical for all copies of the movie. However, this is not essential, but is most likely, due to the nature of the DVD replication process. When a DVD video movie 204 is played in a DVD player 202, the title signal is detected by hardware (i.e., detecting means 206) in the player 202. This title signal is then compared with the player signal that is preferably unique to each DVD player and which is stored in the memory 212 of the player 202. In its simplest form, the player signal would be an N-bit random number. However, in more sophisticated embodiments of the method, the N-bit player signal might contain fields that identify the manufacturer of the player 200, the model number, serial number as well as programmable fields that contain information relating to the owner's name, address and other personal detail which the user can input into the player 202.

Detailed Description Text (14):